

35 USC § 112, SECOND PARAGRAPH REJECTIONS

Claims 47-61 are rejected under 35 USC § 112, second paragraph for failing to point out and distinctly claim the subject matter of the invention. The claims have been amended and the Applicants believe that the grounds for rejection are moot.

35 USC § 101 REJECTIONS

Claims 47-61 are rejected under 35 USC § 101 as being directed to non-statutory subject matter. The claims have been amended and the Applicants believe that the grounds for rejection are moot.

Specifically, claims 47 and 52 recite recording media that include instructions for storing a history of use and for calculating a residual value, respectively. Such recording media are drawn to statutory subject matter.

35 U.S.C. § 102 REJECTIONS

The Examiner has rejected claims 1-4, 6, 7, 10-14, 16-20, 22, 23, 26-30, 32-36, 38, 41-45, 47-50, 52, and 54-59 under 35 USC § 102(a), 102(b) and/or 102(e) as being anticipated by U.S. Patent Number 5,867,809 to Soga, et al. ("Soga" or the "Soga Reference"). Alternatively, the Examiner has rejected claims 1-3, 6, 7, 10-13, 16-19, 22, 23, 26-29, 32-35, 38, 41-44, 47-49, 52, and 55-58 under 35 USC § 102(e) as being anticipated by U.S. Patent Number 6,349,268 to Ketonen, et al. ("Ketonen" or the "Ketonen Reference"). The Applicants respectfully traverse these rejections based on the above amendments and the following remarks.

The Soga reference purports to disclose a remaining life estimation system for electrical appliances. More specifically,

the present invention makes it possible to grasp the history of each of the components and joints such as solder constituting the printed circuit board 2 installed in an electric appliance under the used condition including the used environment.

Soga, col. 9, lines 22-26. However, Soga teaches a timer 22 that counts the operation time, i.e., the time when the power is turned ON. See, e.g., Id., col. 9, lines 32-38. By comparison, the present invention includes a timing circuit that detects an elapsed time from the date of manufacture and/or the date of first use. Thus it is the gross time and not simply the time when the electrical device is in operation, i.e., powered ON.

In short, it is respectfully submitted that, the claims as amended are not anticipated by the Soga reference, and further, satisfy all of the requirements of 35 U.S.C. 100, et seq., especially § 102(a), (b), and/or (e). Accordingly, claims 1-4, 6, 7, 10-14, 16-20, 22, 23, 26-30, 32-36, 38, 41-45, 47-50, 52, and 54-59 are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

The Ketonen Reference discloses a method and system for estimating the life of a device so that components of the system can be replaced prior to failure. Ketonen predicts the life time of a device based upon measured temperatures and corresponding life time points and/or remaining life time based on a sensed temperature. See, e.g., Ketonen, col. 4, lines 1-11. Specifically, the Ketonen system periodically measures the temperature of a device and stores such measurements in memory from which a controller can determine the life time points corresponding to that temperature. See, e.g., Id., col. 4, lines 14-19. More specifically, the Ketonen system takes temperature measures at prescribed intervals, e.g., every two minutes, as measured from the time the device is powered ON. See, e.g., col. 5, lines 48-49. Thus, particularly with respect to claim 2 of the invention as claimed, the Ketonen system does not measure time from the date of manufacture or first use, but, rather, from each power ON event.

Tables 1 and 2 of Ketonen illustrate the relationship between time, temperature, and life time points. The first column of Table 1 shows the elapsed time from power ON in two-minute intervals. The second column provides the temperature sensed at each time interval. The third column provides the life time points/2 minutes (taken from Table 2). The fourth column provides the accumulated sum of life time points. The life time left of the device can be estimated by subtracting the accumulated sum from the predicted life time points of a device. See, e.g., Id., col. 6, lines 45-49.

In short, it is respectfully submitted that, the claims are not anticipated by the Ketonen reference, and further, satisfy all of the requirements of 35 U.S.C. 100, et seq., especially § 102(e). Accordingly, claims 1-3, 6, 7, 10-13, 16-19, 22, 23, 26-29, 32-35, 38, 41-44, 47-49, 52, and 55-58 are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

35 U.S.C. § 103(a) REJECTIONS

The Examiner has rejected claims 5, 15, 21, 31, 37, 46, 51, and 60 under 35 USC 103(a) as being unpatentable over Soga in view of U.S. Patent Number 6,453,266 to Chainer, et al. ("Chainer" or the "Chainer Reference"). Alternatively, the Examiner has rejected claims 5, 15, 21, 31, 37, 46, 51, and 60 under 35 USC 103(a) as being unpatentable over Ketonen in view of Chainer. The Examiner further has rejected claim 61 under 35 USC 103(a) as being unpatentable over Soga. The Applicants respectfully traverse these rejections for the reasons provided in greater detail below.

For the same reasons provided above, the Soga reference also cannot make the present invention obvious. Moreover, the Chainer reference cannot make up for the deficiency of Soga. Accordingly, the Applicants respectfully assert that, claims 5, 15, 21, 31, 37, 46, 51, and 60 are not made obvious by Soga in view of the Chainer reference.

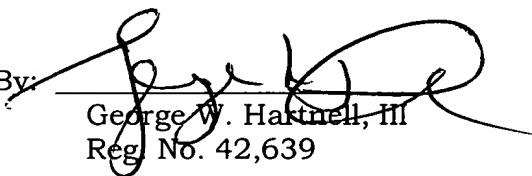
For the same reasons provided above, the Ketonen reference also cannot make the present invention obvious. The Chainer reference cannot make up for the deficiency of Ketonen. Accordingly, the Applicants respectfully assert that, claims 5, 15, 21, 31, 37, 46, 51, and 60 are not made obvious by Ketonen in view of the Chainer reference.

In short, it is respectfully submitted that, claims 5, 15, 21, 31, 37, 46, 51, and 60 are not made obvious by any of the cited references, and further, satisfy all of the requirements of 35 U.S.C. 100, et seq., especially § 103(a). Accordingly, claims 5, 15, 21, 31, 37, 46, 51, and 60 are allowable. Moreover, it is respectfully submitted that the subject application is in condition for allowance. Early and favorable action is requested.

The Applicants believe that no additional fee is required for consideration of the within Response. However, if for any reason the fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge Deposit Account No. **04-1105**.

Respectfully submitted,

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**ANNEX TO RESPONSE TO OFFICE ACTION
INCLUDING MARKED-UP VERSIONS OF AMENDED CLAIMS**

1. (Amended) A history storing device for storing a history of use of an electrical apparatus, comprising:

a detecting circuit for detecting a state of said electrical apparatus, and for issuing an electrical signal corresponding to the detected state, wherein
said detecting circuit includes a circuit for detecting an elapsed time from at least one of the date of manufacture of said electrical apparatus and the date of first use of said electrical apparatus, and for issuing an electrical signal corresponding to the detected elapsed time;

a determining circuit, connected to said detecting circuit, for determining a history of use of said electrical apparatus based on the electrical signal sent from said detecting circuit; and

a storage circuit, connected to said determining circuit, for storing the detected history of use of the electrical apparatus.

3. (Amended) The history storing device according to claim 1, wherein

said detecting circuit includes a circuit for detecting a use environment of said electrical apparatus, and for issuing an electrical signal corresponding to the detected use environment.

4. (Amended) The history storing device according to claim 1, wherein

said detecting circuit includes a circuit for detecting a frequency of use of said electrical apparatus, and for issuing an electrical signal corresponding to the frequency of use.

5. (Amended) The history storing device according to claim 1, wherein

said detecting circuit includes a circuit for detecting a magnitude of impact applied to said electrical apparatus by a user of said electrical apparatus, and for issuing an electrical signal corresponding to the detected ~~impact~~ magnitude of impact.

6. (Amended) An electrical apparatus, wherein the electrical apparatus comprises comprising the history storing device according to claim 1.

7. (Amended) A residual value calculating device for calculating a residual value of an electrical apparatus, comprising:

a detecting circuit for detecting a state of said electrical apparatus, and for issuing an electrical signal corresponding to the detected state;

a determining circuit, connected to said detecting circuit, for determining a history of use of said electrical apparatus based on the electrical signal sent from said detecting circuit;

a calculating circuit, connected to said determining circuit, for calculating the residual value remaining in said electrical apparatus based on the determined history of use of said electrical apparatus;~~and~~

an output circuit, connected to said calculating circuit, for outputting the calculated residual value; and

a storage circuit, connected to said calculating circuit, for distinguishing parts forming the electrical apparatus based on patterns of variations of residual values during an elapsed time, and for storing said patterns of variations of residual values and the distinguished parts forming the electrical apparatus based thereon, wherein said calculating circuit includes a circuit, connected to said determining circuit and said storage circuit, for integrating values remaining in the respective parts forming said electrical apparatus based on the history of use determined using said determining circuit and the patterns of variations of the residual values stored in said storage circuit, and for calculating the residual value remaining in said electrical apparatus.

9. (Amended) The residual value calculating device according to claim 78, further comprising:

a receiving circuit, connected to said storage circuit, for receiving said ~~variation~~ patterns of variations of residual values for storage in said storage circuit.

10. (Amended) The residual value calculating device according to claim 7, further comprising:

a storage circuit, connected to said calculating circuit, for storing an initial value of said electrical apparatus, wherein

said calculating circuit includes a circuit, connected to said determining circuit and said storage circuit, calculating the residual value remaining in said electrical apparatus based on said initial value and the determined history of use of the electrical apparatus.

11. (Amended) The residual value calculating device according to claim 10, further comprising:

a receiving circuit, connected to said storage circuit, ~~for~~ and receiving said initial value for storage in said storage circuit.

12. (Amended) The residual value calculating device according to claim 7, wherein said detecting circuit includes a circuit for detecting an elapsed time from at least one of the ~~dated~~ data of manufacture of said electrical apparatus and the ~~dated~~ data of first use of said electrical apparatus, and for issuing an electrical signal corresponding to the detected elapsed time.

13. (Amended) The residual value calculating device according to claim 7, wherein said detecting circuit includes a circuit for detecting a use environment of said electrical apparatus, and for issuing an electrical signal corresponding to the detected use environment.

14. (Amended) The residual value calculating device according to claim 7, wherein said detecting circuit includes a circuit for detecting a frequency of use of said electrical apparatus, and issuing an electrical signal corresponding to the detected frequency of use.

15. (Amended) The residual value calculating device according to claim 7, wherein said detecting circuit includes a circuit for detecting a magnitude of impact applied to said electrical apparatus by a user of said electrical apparatus, and issuing an electrical signal corresponding to the detected ~~impact~~ magnitude of impact.

16. (Amended) An electrical apparatus, wherein the electrical apparatus comprises ~~comprising~~ the residual value calculating device according to claim 7.

17. (Amended) A history storing device for storing a history of use of an electrical apparatus, comprising:

means for detecting a state of said electrical apparatus, and issuing an electrical signal corresponding to the detected state; wherein

said detecting means includes means for detecting an elapsed time from at least one of the date of manufacture of said electrical apparatus and the date of first use of said electrical apparatus, and for issuing an electrical signal corresponding to the detected elapsed time;

means, connected to said detecting means, for determining a history of use of said electrical apparatus based on the electrical signal sent from said detecting means; and

storage means, connected to said determining means, for storing the detected history.

19. (Amended) The history storing device according to claim 17, wherein said detecting means includes means for detecting a use environment of said electrical apparatus, and for issuing an electrical signal corresponding to the detected use environment.

20. (Amended) The history storing device according to claim 17, wherein said detecting means includes means for detecting a frequency of use of said electrical apparatus, and for issuing an electrical signal corresponding to the detected frequency of use.

21. (Amended) The history storing device according to claim 17, wherein
said detecting means includes means for detecting a magnitude of impact
applied to said electrical apparatus by a user of said electrical apparatus, and for
issuing an electrical signal corresponding to the detected ~~impact~~-magnitude of impact.

22. (Amended) An electrical apparatus, wherein the electric apparatus comprises
~~comprising~~ the history storing device according to claim 17.

23. (Amended) A residual value calculating device for calculating a residual value
of an electrical apparatus, comprising:

means for detecting a state of said electrical apparatus, and for issuing an
electrical signal corresponding to the detected state;

means, connected to said detecting means, for determining a history of use of
said electrical apparatus based on the electrical signal sent from said detecting means;

means, connected to said detecting means, for storing the determined history
of use;

means, connected to said determining means, for calculating the residual value
remaining in said electrical apparatus based on the determined history of use; and

means, connected to said calculating means, for outputting the calculated
residual value remaining in said electrical appliance;

means, connected to said calculating means, for distinguishing parts forming
the electrical apparatus based on patterns of variations of residual values during an
elapsed time, and for storing said patterns of variations of residual values and the
distinguished parts based thereon,

wherein said calculating means includes means, connected to said determining means
and said storage means, for integrating values remaining in the respective parts
forming said electrical apparatus based on the history determined by said determining
means and the patterns of variations of residual values stored in said storage means,
and calculating the value remaining in said electrical apparatus.

25. (Amended) The residual value calculating device according to claim ~~23~~24, further comprising:

means, connected to said storage means, for receiving said ~~variation patterns of variations of residual values~~ for storage in said storage means.

26. (Amended) The residual value calculating device according to claim 23, further comprising:

means, connected to said calculating means, for storing an initial value of said electrical apparatus, wherein

said calculating means includes means, connected to said determining means and said storage means, for calculating the residual value remaining in said electrical apparatus based on said initial value and the determined history of use.

27. (Amended) The residual value calculating device according to claim 26, further comprising:

means, connected to said storage means, for receiving said initial value for storage in said storage means.

28. (Amended) The residual value calculating device according to claim 23, wherein said detecting means includes means of detecting an elapsed time from at least one of the dateddata of manufacture of said electrical apparatus and the dateddata of first use of said electrical apparatus, and for issuing an electrical signal corresponding to the detected elapsed time.

29. (Amended) The residual value calculating device according to claim 23, wherein said detecting means includes means of detecting a use environment of said electrical apparatus, and for issuing an electrical signal corresponding to the detected use environment.

30. (Amended) The residual value calculating device according to claim 23, wherein

said detecting means includes means for detecting a frequency of use of said electrical apparatus, and for issuing an electrical signal corresponding to the detected frequency of use.

31. (Amended) The residual value calculating device according to claim 23, wherein said detecting means includes means for detecting a magnitude of impact applied to said electrical apparatus by a user of said electrical apparatus, and for issuing an electrical signal corresponding to the detected ~~impact~~-magnitude of impact.

32. (Amended) An electrical apparatus, wherein said electrical apparatus comprises ~~comprising~~ the residual value calculating device according to claim 23.

33. (Amended) A history storing method for storing a history of use of an electrical apparatus including a history storing device, said history storing device including a detecting circuit, a determining circuit, and a storage circuit, the method comprising the steps of:

detecting a state of said electrical apparatus using ~~by~~ said detecting circuit, and issuing an electrical signal corresponding to the detected state;

wherein said step of issuing said electrical signal includes the sub-steps ~~step of~~

detecting an elapsed time from at least one of the date of manufacture of said electrical apparatus and the date of first use of said electrical apparatus, and

issuing an electrical signal corresponding to the detected elapsed time;

determining the history of use of said electrical apparatus based on said electrical signal using ~~by~~ said determining circuit; and

storing the history determined in said step of determining the history using ~~by~~ said storage circuit.

35. (Amended) The history storing method according to claim 33, wherein said step of issuing said electrical signal includes the step of detecting a use environment of said electrical apparatus, and issuing an electrical signal corresponding to the detected use environment.

36. (Amended) The history storing method according to claim 33, wherein said step of issuing said electrical signal includes the step of detecting a frequency of use of said electrical apparatus, and issuing an electrical signal corresponding to the detected use frequency.

37. (Amended) The history storing method according to claim 33, wherein said step of issuing said electrical signal includes the step of detecting a magnitude of impact applied to said electrical apparatus by a user of said electrical apparatus, and issuing an electrical signal corresponding to the detected impact magnitude of impact.

38. (Amended) A residual value calculating method of calculating a residual value remaining in an electrical apparatus including a residual value calculating device, said residual value calculating device including a detecting circuit, a determining circuit, a calculating circuit, a storage circuit, and an output circuit, the method comprising the steps of:

detecting a state of said electrical apparatus using said detecting circuit, and issuing an electrical signal corresponding to the detected state;

determining a history of use of said electrical apparatus based on said electrical signal using said determining circuit;

calculating a residual value remaining in said electrical apparatus using said calculating circuit based on the history of use determined in said step of determining the history of use; and

outputting the residual value calculated in said step of calculating said the residual value using said output circuit; and

distinguishing parts forming the electrical apparatus based on patterns of variations of residual values with respect to time elapsing, and preparing said patterns of variations of residual values and the parts based thereon, wherein

said step of calculating the residual value includes the step of integrating values remaining in the respective parts forming said electrical apparatus based on

said history of use and said variation patterns of variations of residual values, and calculating the residual value remaining in said electrical apparatus.

40. (Amended) The residual value calculating method according to claim 39, further comprising the step of:

receiving said ~~variation patterns~~ of variations of residual values for storage in said storage circuit.

41. (Amended) The residual value calculating method according to claim 38, further comprising the step of:

preparing an initial value of said electrical apparatus, wherein
said step of calculating the value includes the step of calculating the value remaining in said electrical apparatus based on said initial value and said determined history of use.

42. (Amended) The residual value calculating method according to claim 41, further comprising the step of:

receiving said initial value for storage in said storage circuit.

43. (Amended) The residual value calculating method according to claim 38, wherein

said step of issuing said electrical signal includes the step of detecting an elapsed time from at least one of the datedata of manufacture of said electrical apparatus and the datedata of first use of said electrical apparatus, and issuing an electrical signal corresponding to the detected elapsed time.

44. (Amended) The residual value calculating method according to claim 38, wherein

said step of issuing said electrical signal includes the step of detecting a use environment of said electrical apparatus, and issuing an electrical signal corresponding to the detected use environment.

45. (Amended) The residual value calculating method according to claim 38, wherein

said step of issuing said electrical signal includes the step of detecting a frequency of use of said electrical apparatus, and issuing an electrical signal corresponding to the detected frequency of use.

46. (Amended) The residual value calculating method according to claim 38, wherein

said step of issuing said electrical signal includes the step of detecting a magnitude of impact applied to said electrical apparatus by a user of said electrical apparatus, and issuing an electrical signal corresponding to the detected ~~impact~~ magnitude of impact.

47. (Amended) A recording medium for recording in a computer-readable fashion a program achieving a history storing method of storing a history of use of an electrical apparatus including a history storing device, said history storing device including a detecting circuit, a determining circuit, and a storing circuit; and said recording medium having instructions to perform the steps of ~~for history storing method comprising the steps of:~~

detecting a state of said electrical apparatus using by said detecting circuit, and issuing an electrical signal corresponding to the detected state;

wherein said step of issuing said electrical signal includes the sub-steps of

detecting an elapsed time from at least one of the date of manufacture of said electrical apparatus and the date of first use of said electrical apparatus; and

issuing an electrical signal corresponding to the detected elapsed time;

determining the history of use of said electrical apparatus based on said electrical signal using by said determining circuit; and

storing the history of use determined in said step of determining the history of use using by said storage circuit.

49. (Amended) The recording medium according to claim 47, wherein said step of issuing said electrical signal includes the step of detecting a use environment of said electrical apparatus, and issuing an electrical signal corresponding to the detected use environment.

50. (Amended) The recording medium according to claim 47, wherein said step of issuing said electrical signal includes the step of detecting a frequency of use of said electrical apparatus, and issuing an electrical signal corresponding to the detected frequency of use.

51. (Amended) The recording medium according to claim 47, wherein said step of issuing said electrical signal includes the step of detecting a magnitude of impact applied to said electrical apparatus by a user of said electrical apparatus, and issuing an electrical signal corresponding to the detected ~~impact~~ magnitude of impact.

52. (Amended) A recording medium for recording in a computer-readable fashion a program achieving a residual value calculating method of calculating a residual value remaining in an electrical apparatus including a residual value calculating device, said residual value calculating device including a detecting circuit, a determining circuit, a calculating circuit, a storage circuit, and an output circuit; and said recording medium having instructions to perform the steps of for ~~said residual value calculating method comprising the steps of:~~

detecting a state of said electrical apparatus using~~by~~ said detecting circuit, and issuing an electrical signal corresponding to the detected state;

wherein said step of issuing said electrical signal includes the sub-steps of:

detecting an elapsed time from at least one of the date of manufacture of said electrical apparatus and the date of first use of said electrical apparatus, and

issuing an electrical signal corresponding to the detected elapsed time;

determining a history of use of said electrical apparatus based on said electrical signal using~~by~~ said determining circuit;

calculating a value remaining in said electrical apparatus using said calculating circuit based on the history of use determined in said step of determining the history of use; and

outputting the residual value calculated in said step of calculating the residual value using said output circuit.

53. (Amended) The recording medium according to claim 52, wherein said residual value calculating method further includes the step of distinguishing parts forming the electrical apparatus based on patterns of variations of residual values with respect to time elapsing, and preparing said patterns of variations of residual values and ~~said~~the parts based thereon~~belonging to the respective patterns~~; and

said step of calculating the value includes the step of integrating values remaining in the respective parts forming said electrical apparatus based on said history of use and said ~~variation-patterns~~ of variations of residual values, and calculating the residual value remaining in said electrical apparatus.

54. (Amended) The recording medium according to claim 52, wherein said residual value calculating method further includes the step of receiving said ~~variation-patterns~~ of variations of residual values for storage in said storage circuit.

55. (Amended) The recording medium according to claim 52, wherein said residual value calculating method further includes the step of preparing an initial value of said electrical apparatus; and
said step of calculating the residual value includes the step of calculating the residual value remaining in said electrical apparatus based on said initial value and said determined history of use.

56. (Amended) The recording medium according to claim 52, wherein

said residual value calculating method further includes the step of receiving ~~an~~said initial value for storage in said storage circuit.

58. (Amended) The recording medium according to claim 52, wherein said step of issuing said electrical signal includes the step of detecting a use environment of said electrical apparatus, and issuing an electrical signal corresponding to the detected use environment.

59. (Amended) The recording medium according to claim 52, wherein said step of issuing said electrical signal includes the step of detecting a frequency of use of said electrical apparatus, and issuing an electrical signal corresponding to the detected frequency of use.

60. (Amended) The recording medium according to claim 52, wherein said step of issuing said electrical signal includes the step of detecting a magnitude of impact applied to said electrical apparatus by a user of said electrical apparatus, and issuing an electrical signal corresponding to the detected ~~impact~~ magnitude of impact.

61. (Amended) An electrical apparatus recycle method of collecting and recycling an electrical apparatus including a residual value calculating device, said residual value calculating device including a detecting circuit for detecting a state of said electrical apparatus, and issuing an electrical signal corresponding to the detected state, ~~an~~ determining circuit for determining a history of use of said electrical apparatus based on the electrical signal sent from said detecting circuit, and a calculating circuit for calculating ~~at~~the residual value remaining in said electrical apparatus based on the determined history of use, ~~and~~ said recycle method comprising the steps of:

outputting the residual value remaining in said electrical apparatus and calculated by said calculating circuit for collecting said electrical apparatus by a collecting agent; and

setting a price for sale of said electrical apparatus based on the value output in said step of outputting said residual value.